



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,804	10/01/2003	Mitsuhiko Sato	CANO:91	3089

7590  
ROSSI & ASSOCIATES  
P.O. Box 826  
Ashburn, VA 20146-0826

04/12/2007

EXAMINER

PHAM, HAI CHI

ART UNIT

PAPER NUMBER

2861

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/676,804	SATO ET AL.	
	Examiner	Art Unit	
	Hai C. Pham	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2007.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-4,6,9-11 and 13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4,6,9-11 and 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br/>Paper No(s)/Mail Date _____</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>Paper No(s)/Mail Date. _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____</p> |
|--|--|

**FINAL REJECTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2-3 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Arai (Pub. No. US 2002/0080220).

Arai discloses an image forming apparatus comprising a plurality of image forming units (4Y, 4M, 4C, 4K, Fig. 1a) that form images and overlap the formed images onto a transfer material (intermediate transfer member 1), a plurality of scanners (e.g., respective polygon mirrors 434Y, 434M, 434C, 434K) that form images in said plurality of image forming units respectively, a first controller that has a first mode (full-color mode) in which said plurality of scanners are driven in synchronism with each other to carry out image formation by said plurality of image forming units (all the polygon mirrors 434Y, 434M, 434C, 434K being operative to form a color image), and a second mode (black and white mode) in which at least one of said plurality of scanners is driven (polygon mirror 434K being activated) to carry out image formation by at least one of said image forming units (only black component including the polygon mirror 434K and the K laser being operative), said first controller causing, while the image formation is being carried out in the second mode, all the scanners not being used for the image

Art Unit: 2861

formation in the second mode to be driven independently of the at least one of the plurality of scanners being used for the image formation in the second mode (while in the black and white mode, all of the polygon mirrors are caused to be driven in the order of 434k, 434Y, 434M and 434C, with the polygon mirror 434K starting first although the remaining polygon mirrors 434Y, 434M and 434C are not being used in the black and white mode, the polygon mirrors 434Y, 434M and 434C are being tied to the printing operation during the black and white mode) (paragraph [0053]), and a second controller that carries out the image formation in the first mode after the image formation in the second mode is completed (the polygon mirrors 434Y, 434M and 434C are activated during the black and white printing mode so as to be ready to be used in the full-color printing mode on the occasion after the first black and white image [or on the next occasion of full-color printing], meaning when the black and white printing mode is completed) (paragraph [0055]).

The method claim 9 is deemed to be clearly anticipated by the functions of the above structures.

With regard to claims 3 and 10, Arai further teaches the image formation in the second mode being monochromatic image formation (i.e., black and white mode), and the image formation in the first mode being image formation in a plurality of colors (i.e., full-color mode).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of Gomi et al. (U.S. 6,314,251).

Arai discloses all the basic limitations of the claimed invention except for the first controller starts a preparation for applying high voltage to at least one of said image forming units that is not being used for the image formation in the second mode.

Gomi et al. discloses an image forming apparatus for forming image in a full color mode or a monochromatic mode, wherein during the black monochromatic mode, the magnetic brush chargers (101b, 102b, and 103b) of the other color image forming units are driven so as to apply a high voltage to charge the respective photosensitive members (101a, 102a and 103a) on which no image is formed so that smeared color image will be prevented (col. 7, lines 44-56) (col. 10, line 47 through col. 11, line 9).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Arai by applying high voltage to the image forming units that are not being used for the image formation in the monochromatic mode as taught by Gomi et al. for the purpose of preventing the color image being smeared as suggested by Gomi et al.

Art Unit: 2861

5. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of Oda et al. (U.S. 6,094,208).

Arai discloses all the basic limitations of the claimed invention except for the second controller synchronizing the plurality of scanners after the image formation in the second or monochromatic mode is completed.

Oda et al. discloses an image forming apparatus for forming image in a full color mode or a monochromatic mode, wherein upon switching to the full color mode, all the polygon mirrors will be driven in synchronism using the signal from BD sensor (88d) of the laser scanning unit (27d) for recording black image so as to facilitate a quicker and more precise set up and synchronization of the drives of the polygon mirrors in the full color mode (col. 16, lines 9-25).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to synchronize the polygon mirrors in the device of Arai after the completion of the monochromatic mode by using the synchronizing signal obtained in the monochromatic mode as taught by Oda et al. The motivation for doing so would have been to prevent the misalignment of the plural toner images as well as to facilitate a quicker and more precise set up and synchronization of the drives of the polygon mirrors in the full color mode as suggested by Oda et al.

### ***Response to Arguments***

6. A typographical error was made in the previous Office action with regard to the listing of the claims to be rejected under 35 U.S.C. 102(b) as being anticipated by Arai

Art Unit: 2861

(Pub. No. US 2002/0080220). The examiner is thankful to the Applicant for correctly assuming that instead of "claims 2-3, 5 and 9", the following "claims 2-3, 5, 9-10 and 12" are covered under the above-mentioned rejection since claims 10 and 12 recite the same limitations as that of claims 3 and 5, respectively.

7. Applicant's arguments filed 01/31/07 have been fully considered but they are not persuasive.

Applicant argued that Arai "drives the polygon mirrors sequentially one after another over a predetermined period rather than driving them independently of the polygon mirror 434K used for the monochrome printing mode". It is noted that the claimed terminology "driven independently" does not mean and/or is not supported by the current disclosure that the color polygon mirrors are timewise arbitrarily driven. It does not either preclude that the color polygon mirrors are to be driven in sequence. Arai teaches the polygon mirrors being sequentially driven over a predetermined short period of time so as to get the color polygon mirrors ready in an orderly and quickly manner for the eventual switchover to the full-color printing mode when it happens that the full-color mode is next selected. Moreover, without any specific details uncovered in the current Disclosure, the color polygon mirrors "being driven independently" is construed by the examiner as the color polygon mirrors not taking any active part in producing the monochrome image. Although "the periods at which the polygon mirrors 434y, 434M, and 434C are driven are tied to the polygon mirror 434K" as the Applicant argues, the polygon mirrors 434y, 434M, and 434C are however not being an active part of the monochrome printing mode.

Applicant also argued that Arai “would not have disclosed or taught switching to the first mode from the second mode, after the image formation in the second mode is completed”. The examiner respectfully disagrees. Arai does teach the printing system going into the ready-to-write condition for forming a full color image while in the black and white printing mode, and that the full color printing mode starts no earlier than the full completion of the black and white printing session, otherwise the deterioration of the image quality would occur. Applicant further argued that “Arai merely discloses preparing the printer for the ready-to-write condition, and does not disclose anywhere that it switches the color printing mode after the monochrome printing mode is completed”. The examiner again respectfully disagrees. The following passage “*preparing for the possibility that the color image will be formed on the occasion after the first black and white image*” of Arai at paragraph [0055], clearly and explicitly indicates the switch-over to the full-color mode after the first black and white image forming being completed when it happens that the color image forming mode is selected next.

Applicant also argues that “Arai explicitly discloses after step F23, stopping the color polygons and the monochrome polygon” and thus “would not have disclosed or taught this [claimed] aspect of the invention”. In fact, Arai teaches an advantageous feature of the printing system in paragraph [0067] in that after the completion of any printing mode, when the automatic shut-off times (e.g., waiting times) T1 and T2 set for the color polygons and the monochrome polygon, respectively, have passed (e.g., there is no demand for any print job for a long time), all the polygons are to be stopped. This



Art Unit: 2861

has no relation with respect to the switchover between the different printing modes as discussed above.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2861

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HAI PHAM  
PRIMARY EXAMINER

April 6, 2007